

HHE UNIVERD SHAVIES OF AMIERIOS

<u>TO ALL TO WHOM THESE PRESENTS; SHATIL COMES</u>

Mest Pred LLC.

DECEMS, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANTS) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE **EXAMIN**ATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VANETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY ARS FROM THE DATE OF THIS GRAND, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC CEPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE GET TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR RTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT D BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT. COMMON

'Winterhawk'

In Testimony Mucrest, I have hereunto set my hand and caused the seal of the Hant Barista Frotection Office to be affixed at the City of Washington, D.C. this seventh day of April, in the year two thousand and eight.

Commissioner Plant Variety Protection Office Agricultural Marketing Service Colward V. Schaff

CAPACITY OR TITLE

12/20/2007

Research Director

12/20/2007

CAPACITY OR TITLE

Wheat Breeder

Exhibit A – Breeding History for Winterhawk

HV9W02-846R (Winterhawk) was derived from the cross 474S10-1/X87807//HBK736-3, made by Kansas State University in Manhattan KS in 1995. The lines represented in the pedigree are experimental lines from the old Pioneer wheat program that donated their material to Kansas State University in the early 90's. The F1 was increased in Manhattan in 1996. F2 populations were grown in 1997. Individual plants were harvested on the basis of leaf rust resistance within the population and bulked to form an F3 population. In 1998, individual plants were selected based on resistance to leaf rust and bulked to form an F4 population. In 1999, individual plants were selected based on resistance to leaf rust and bulked to form an F5 population. In 2000, Goertzen Seed Research selected plants from the F6 population grown at Hutchinson, KS based on resistance to leaf rust. In 2001, F7 head row families were grown in Haven, KS. A single head row was harvested on the basis of vigor and good foliar disease resistance. An F8 observation plot was grown at Haven, KS in 2002, and selected on the basis of vigor, good foliar resistance, and high test weight. F9 head rows were grown in Milliken, CO in 2003. Multiple heads were selected from a single head row on the basis of vigor and straw strength. F10 head rows were grown in Milliken, CO in 2004. A single head row was harvested on the basis of vigor and straw strength. An F11 strip increase was grown in Milliken, CO in 2005. Breeder seed was produced in Milliken, CO in 2006.

Winterhawk has been observed for four generations of reproduction, and is stable and uniform. Variants that may occur include taller (5-10 cm) plants at a rate of 0.1%, and bronze/brown chaffed plants at a rate of 0.01%.

Exhibit B - Statement of Distinctness for "Winterhawk"

Winterhawk is most similar to the variety Endurance except that it has erect and non-twisted flag leaves, while the flag leaves of Endurance are recurved and twisted.

REPRODUCE LOCALLY. Include form number and date on all reproductions.

Form Approved OMB NO 9581-0955

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 2.5 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Exhibit C

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE SCIENCE AND TECHNOLOGY

OBJECTIVE DESCRIPTION OF VARIETY

PLANT VARIETY PROTECTION OFFICE BELTSVILLE, MD 20705

	Wheat (Tri	iticum spp.)	
NAME OF APPLICANT (S)	TEMPORARY OR EXPERIMENT	AL DESIGNATION	VARIETY NAME
WestBred LLC	HV9W02-9	346R	Winterhawk
ADDRESS (Street and No. or RD No., City, State, Zip Code			FOR OFFICIAL USE ONLY
14604 S. Haven Rd.	Haven, KS.6	7543 USA	PVPO NUMBER
			#200800078
PLEASE READ ALL INSTRUCTIONS CAREFI	JLLY:		
*	spectively. Data for quantitative p he same trial. Royal Horticultural	tant characters should be b Society or any recognized	a zero in the first box (e.g., 0 9 9 or 0 9) ased on a minimum of 100 plants. Comparative data color standard may be used to determine plant colors; rour variety; lack of response may delay progress of
1. KIND: 1 = Common 2 = Durum 3 = Club 4 = Other (Specify)		2. VERNALIZATION: 1 = Spring 2 = Winter 3 = Other (S	Specify)
3. COLEOPTILE ANTHOCYANIN: 1 = Absent 2 = Pre	sent	4. JUVENILE PLANT G	
5. PLANT COLOR: (boot stage) RHS 14	17 A	6. FLAG LEAF: (boot st	age)
1 = Yellow-Green		1 = Erect	2 = Recurved
2 = Green 3 = Blue-Green		1 = Not Twis	sted 2 = Twisted
· ·		1 = Wax Ab	sent 2 = Wax Present
7. EAR EMERGENCE: 1 2 5 Number of Days (Average) 0 3 Number of Days Earlier Than Same As Number of Days Later Than	· Smoky Hill · Ouevley *Relative to a PVPO/Approved	l Commercial Variety Grown	n in the Same Trial
8. ANTHER COLOR: 1 = Yellow 2 = Purple			

	tr HEIGHT: (from soil to top of head, excluding awns) cm (Average) cm Taller Than Santa Fe Same As Keota cm Shorter Than		*	# 6	2	0	0 8	3 0	0	0	7	3
10. STE	M:											
A. (ANTHOCYANIN 1 = Absent 2 = Present	D.	INTERNODE 1 = Hollow Number of Node	2 = Semi-Sol s	id	3	= So	lid				
в. v	NAXY BLOOM 1 = Absent 2 = Present	E.	PEDUNCLE 3 1 = Erect 2 = 4 2 cm Length	00		mi-Ei	rect			ןץ ו	A4 -31	-08
C. 1	HAIRINESS (last internode of rachis) 1 = Absent 2 = Present	F.	AURICLE Anthocyanin: Hair:	1 = Absent				esent esent		ŕ		
11. HEA	D: (At Maturity)											
Α. Ε	DENSITY	C.	CURVATURE									
2	1 = Lax 2 = Middense (Laxidense) 3 = Dense		1 = Erect 2 = Inclined 3 = Recurved									
B. S	SHAPE	D.	AWNEDNESS									
	1 = Tapering 2 = Strap 3 = Clavate 4 = Other (Specify)		1 = Awnless 2 = Apically Awnl 3 = Awnletted 4 = Awned	etted								
12. GLUI	WES: (At Maturity)	**										
A. C	COLOR	É. I	BEAK WIDTH									
	1 = White 2 = Tan 3 = Other (Specify)		1 = Narrow 2 = Medium 3 = Wide									
	HOULDER	F. (GLUME LENGTH									
5	1 = Wanting 2 = Oblique 3 = Rounded 4 = Square 5 = Elevated 6 = Apiculate 7 = Other (Specify)		3 = Short (ca. 7 n 2 = Medium (ca. 8 3 = Long (ca. 9 m	8 mm)								
c. s	HOULDER WIDTH 1 = Narrow 2 ≈ Medium 3 = Wide	G. 1	MIDTH 1 = Narrow (ca. 3 2 = Medium (ca. 3 3 = Wide (ca. 4 m	3.5 mm)								
D. B	EAK .	Н. І	PUBESCENCE									
3	1 = Obtuse 2 = Acute 3 = Acuminate		1 = Not Present 2 = Present									

13. SI	EED:	
Α	SHAPE	e. color #20080078
2	1 = Ovate 2 = Oval 3 = Elliptical	1 = White 2 = Amber 3 = Red 4 = Other (Specify)
В	CHEEK	F. TEXTURE
	1 = Rounded 2 = Angular	1 = Hard 2 = Soft 3 = Other (Specify)
· C	BRUSH	G. PHENOL REACTION (See Instructions)
3	1 = Short 1 = Not Collared 2 = Medium 2 = Collared 3 = Long	1 = Ivory 4 = Dark Brown 2 = Fawn 5 = Black 3 = Light Brown
D.	CREASE 1 = Width 60% or less of Kernel 2 = Width 80% or less of Kernel 3 = Width Nearly as Wide as Kernel	H. SEED WEIGHT 37 g/1000 Seed (whole number only)
	1 = Depth 20% or less of Kernet 2 = Depth 35% or less of Kernel 3 = Depth 50% or less of Kernel	I. GERM SIZE 1 = Small 2 = Midsize 3 = Large
I4. DIS	SEASE: PLEASE INDICATE THE SPECIFIC RACE OR STR	RAIN TESTED
	(0 = Not Tested 1 = Susceptible	2 = Resistant 3 = Intermediate 4 = Tolerant)
	Stem Rust (Puccinia graminis f. sp. tritici)	2 Leaf Rust (Puccinia recondita f. sp. tritici)
2	Stripe Rust (Puccinia striiformis)	O Loose Smut (Ustilago tritici)
0	Tan Spot (Pyrenophora tritici-repentis)	Flag Smut (Urocystis agropyri)
0	Halo Spot (Selenophoma donacis)	O Common Bunt (Tilletia tritici or T. laevis)
0	Septoria nodorum (Glume Blotch)	O Dwarf Bunt (Tilletia controversa)
O	Septoria avenae (Speckled Leaf Disease)	Karnal Bunt (Tilletia indica)
0	Septoria tritici (Speckled Leaf Blotch)	
0	Scab (Fusarium spp.)	Powdery Mildew (Erysiphe graminis f. sp. tritici)
ቨ	"Black Point" (Kernel Smudge)	Snow Molds"
厉	Barley Yellow Dwarf Virus (BYDV)	Common Root Rot (Fusarium, Cochliobolus and Bipolaris spp.)
Ħ		O Rhizoctonia Root Rot (Rhizoctonia solani)
崮	Soilborne Mosaic Virus (SBMV)	Black Chaff (Xanthomonas campestris pv. translucens).
뉳	Wheat Yellow (Spindle Streak) Mosaic Virus	Bacterial Leaf Blight (Pseudomonas syringae pv. syringae)
믬	Wheat Streak Mosaic Virus (WSMV)	Other (Specify)
H	Other (Specify)	Other (Specify)
H	Other (Specify)	Other (Specify)
<u>니</u>	Other (Specify)	Other (Specify)
5. INSE		nt 3 = Intermediate 4 = Tolerant) CIFY BIOTYPE (where needed)
	Hessian Fly (Mayetiola destructor)	Other (Specify)
10	Stem Sawfly (Cephus spp.)	Other (Specify)
0	Cereal Leaf Beetle (Oulema melanopa)	Other (Specify)
	·	

Exhibit C (Wheat)

15. INSECT: (continued)	(0 = Not Tested	1 = Susceptible	2 = Resistant	3 = Intermediate	4 = Tolerant)					
		PLEASE S	SPECIFY BIOTYPE	(Where Needed)	#20	0.8		0 0	em)	A
Russian Aphid (Di	iuraphis noxia)		Other ((Specify)	11 22 0		- W	- -	B	3
Greenbug (Schiza	phis graminum)		O Other	(Specify)	·		·	-		
O Aphids			Other ((Specify)		·		-		

Milling and Baking Quality Data from Horizon Milling

BAKE		<u>ဗ</u>	U	ACC	ž	<u>ز</u>	á	او		 	U	1	,	٤	,	<u>></u>	<u>י</u>	(S)	T	<u>ن</u>	í s	2 2
	$\ \ $	<u>></u>	Ľ	ĭ	L"	<u> </u>	"	4	ľ	_	L	-	Ľ			Ľ	1	' ^ -	1	Ľ	1 > 	<u>' </u>
Mix Tolerance		Acc	ACC	ACC	c	,		A A C C	é	g	ACC		ΨÜÜ	ACC		C	9 0	ACC		ď	۵۵۸	Acc
Dough handling		O	ŋ	O	۳	0	9	?	Ç	9	9		C	0		٥	9 6	O		č	၂	9
Makeup		ဖ	ග	5	O	0	,		Ç	פ	g		Ű	G		۳	0	O		ڻ	U	Ø
Grain Texture Color Absorption Makeup		G	ŋ	9	9	e)		Ç	פ	9		ŋ	9		U	Ø	O		×	O	O
Color	,	פ	9	Ö	O	ď	٥	,	Ġ	9	ŋ		5	O		U	O	O		O	တ	Ö
Texture	004	ACC	ACC	ACC	ACC	ACC	۲		707	2	ACC		ACC	ACC		ACC	ACC	ACC		ACC	ACC	ACC
Grain	70.4	۲	ŋ	ACC	ACC	ACC	S V		700	2	ACC		ACC	ACC		ACC	ACC	ACC		ACC	ACC	ACC
Vol cc Volume	ď	٥	ACC	ACC	ŋ	G	ACC		204	2	ACC		ACC			O	O	ၒ		ă	တ	9
Vol cc	4003	3	958	920	1063	1088	848		886	3	973		876	1013		1060	1012	1005		1120	1028	995
FALLING	129	3	494	539	405	422	528		508		532		491	559		455		485		429	182	447
SKHT HARDNESS	49.0	2.2	62.3	67.3	65.3	66.4	74.5		53.6		61.0		75.9	76.0		77.2	66.3	69.1		61.0	48.4	50.0
TKW	30.7		35.2	36.6	30.2	28.8	34.7	31.3	35.9		38.5	l	26.0	27.2		31.8	30.1	33.2		33.3	30.2	34.6
₽	56.0		23.8	60.5	9'.29	56.4	60.3		61.9		91.6		57.8	59.8		61.4	9'09	62.2		59.6	59.8	58.3
WHEAT	13.9		13.1	14.9	12.3	13.5	14.6		12.6	0.5,	15.0		14.3	15.7		14.1	12.9	15.5		14.4	14.4	15.7
VARIETY	Aspen	Agnon	Aspen	Aspen	Spartan	Spartan	Spartan		Winterhawk	18/5 4	Winternawk		Smoky Hill	Smoky Hill		Jagalene	Jagalene	Jagaiene		Shavano	Shavano	Shavano
Year	2005				2004	- 1	2006		2005		2007		2004	2005		2004		2006		2004		2006

ACC=acceptable G=good VG=very good EX=excellent

REPRODUCE LOCALLY. Include form number and edition date on a	all reproductions.	ORM APPROVED - OMB No. 0581-005
U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE EXHIBIT E	Application is required in order to det certificate is to be issued (7 U.S.C. 2 confidential until the certificate is issued.	421). The information is held
STATEMENT OF THE BASIS OF OWNERSHIP		
1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
WestBred LLC	HV9W02-846R	WINTERHAWK
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country)	5. TELEPHONE (Include area code)	6. FAX (include area code)
14604 S. Haven Rd Haven, KS 67543	(620) 465-2675	(620) 465-2693
	7. PVPO NUMBER	
	#20	0800078
8. Does the applicant own all rights to the variety? Mark an "X" in the	he appropriate block. If no, please expla	in. YES NO
9. Is the applicant (individual or company) a U.S. national or a U.S.	based company? If no, give name of co	ountry. YES NO
10. Is the applicant the original owner?	NO If no, please answer one	of the following:
To the control of the terminal of the control of th		
a. If the original rights to variety were owned by individual(s), is YES	(are) the original owner(s) a U.S. National NO If no, give name of count	
b. If the original rights to variety were owned by a company(ies) is (are) the original owner(e) a LLS has	and company?
YES	NO If no, give name of countr	
11. Additional explanation on ownership (Trace ownership from original contents)	inal breeder to current owner. Use the re	everse for extra space if needed):
	•	
PLEASE NOTE:		
Plant variety protection can only be afforded to the owners (not licen-	sees) who meet the following criteria:	
If the rights to the variety are owned by the original breeder, that p national of a country which affords similar protection to nationals o	person must be a U.S. national, national of the U.S. for the same genus and specie	of a UPOV member country, or es.
If the rights to the variety are owned by the company which emplo nationals of a UPOV member country, or owned by nationals of a genus and species.	yed the original breeder(s), the company country which affords similar protection to	must be U.S. based, owned by o nationals of the U.S. for the same
3. If the applicant is an owner who is not the original owner, both the	original owner and the applicant must me	eet one of the above criteria.
The original breeder/owner may be the individual or company who di Act for definitions.	rected the final breeding. See Section 4	1(a)(2) of the Plant Variety Protection
According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, control number. The valid OMB control number for this information collection is 0581-0055. including the time for reviewing the instructions, searching existing data sources, gathering a	The time required to complete this information collect and maintaining the data needed, and completing and	ion is estimated to average 0.1 hour per response, reviewing the collection of information.
The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and a marital or family status, political beliefs, parental status, or protected genetic information. (N communication of program information (Braille, large print, audiotape, etc.) should contact U	lot all nonhibited bases anniu to all amorame \ Pareon	e with dienhilities who moving alternative magne for
To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-720-5964 (voice and TDD). USDA is an equal opportunity provide and employer.		SW, Washington, D.C. 20250-9410 or call (202)
ST-470-E (04-03) designed by the Plant Variety Protection Office using	Word 2000	· · · · · · · · · · · · · · · · · · ·

Form Approved OMB NO 0581-0056

REPRODUCE LOCALLY. Include form number and date on all reproductions.

Form Approved OMB NO 0581-0055

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 5 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, sexual orientation, marital or family status, political beliefs, parental status, or protected genetic information. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE SCIENCE AND TECHNOLOGY ANT VARIETY PROTECTION OFFICE BELTSVILLE, MD 20705

EXHIBIT F

	VARIETY NAME
y, State, and Zip Code and Country)	Winterhawk FOR OFFICIAL USE ONLY
	PVPO NUMBER # 2 0 0 8 0 0 0 7 8
	KS 67543 USA

I do hereby declare that during the life of the certificate a viable sample of propagating material of the subject variety will be deposited, and replenished as needed periodically, in a public repository in the United States in accordance with the regulations established by the Plant Variety Protection Office.

12/20/2007